

UNITED STATES DEPARTMENT OF AGRICULTURE



Tennessee Job Sheet Prescribed Grazing "Acres per Paddock" Cowboy Math Conservation Practice No. 528

KNOWING ACRES PER Paddock IS EXTREMELY USEFUL FOR CORRECTLY LOCATING FENCE AND WATER



(Photos Courtesy of NRCS)

WHEN PLANNING FOR THE PROPER LOCATION OF FENCE AND WATER, PLAN FOR THE SHORTEST ROTATION. RECOMMENDED Paddock SIZE FOR LARGE ANIMALS (I.E., CATTLE AND HORSES) BASED ON THE ROTATION FREQUENCY AND HEAD/HERD, CIRCLE APPROPRIATE Paddock SIZE IF VARIABLES DIFFER FROM NOTES IN TABLE, MULTIPLY BY AN ADJUSTMENT FACTOR (SEE TABLE FOOTNOTE) _____.

Rotation Frequency ¹ (Days)	Grazing Efficiency ² (%)	Head/ Herd	10	20	30	40	50	60	70	80	90	100	150	200	250	300
			-----Acres per Paddock-----													
3.5	65	-----	1	2	3	4	5	5.5	6.5	7.5	8.5	9.5	14	19	23	28
7	50	-----	2.5	5	7	10	12	15	17	19	22	24	36	49	61	73
14	35	-----	7	14	21	28	35	42	49	56	62	69	104	139	173	208

This table assumes 5 inches of growth at turn in and good to excellent forage weighing 300 pounds per acre inch. Livestock numbers are based on 1,000-pound animals with a calf up to 300 pounds. Consumption rate is based on an average of 2.6 percent of body weight consumed per day throughout the year. Paddock size is an estimate that is best kept within 30% of recommended size. Recommended paddock size is based on the assumed production information in the table.
Adjust recommended acres per paddock by an appropriate factor (i.e., for 900-pound animal, multiply by 0.9; for a 1,200-pound animal, multiply by 1.2); if forage is thinner and lower quality, multiply by 0.8 or for real dense high quality forage, multiply acres per paddock by a factor up to 1.3.

For more specific determination, enter data in USDA/NRCS/TN Cowboy Math Excel spreadsheet or use the following formula:

**Acres/ = (Animal Wt.) X (Intake Rate in % Body Weight) X (Animal No.) X (Days on Paddock) Paddock
(Inches) X (Pounds per Acre Inch) X (% Grazing Efficiency)**

Example 1

Where should I locate water in a 16-acre or smaller field? Given: 50-head cow herd weighing 1,000 pounds, turn cattle in field at 5" height on good forage, rotation is seven days.

Answer: The best location for water would be in the middle of a fence line, because for a seven-day rotation, 12-acre paddocks are recommended. Placement in center of fence line also allows additional cross-fencing with temporary or permanent fencing. If all fields are of similar size and production, water could be placed in every other fence line provided that travel distance to water is less than 800 feet (water points 1,600 feet apart³).

Prescribed Grazing “Acres per Paddock Cowboy Math”

Rotation Frequency ¹			
Livestock	Daily Forage Intake in Percent (%) of Body Weight	Recommended Rotation Days	Number of Paddocks
Lactating Dairy	3-4%	0.5-1 day	15-45
Stocker Cattle, Dairy Heifers	2.5-3.5%	1-3 days	6-45
Beef, Dry Dairy, Swine, or Horse	2-3%	3-7 days	3-16
Sheep, Goats	3.5-4 %	3-7 days	3-16

Grazing Efficiency ²		
Number of Paddocks	Approximate Days on Each Paddock	Grazing Efficiency for Use in Formula (Includes Maintaining Minimum Stubble)
Continuous	-----	40% or less or (80% over-grazed, low yield)
4 to 6 paddocks	7 to 9 days	40 to 55%
8 to 10 paddocks	4 days	55 to 65%
24 to 45 paddocks	1 day or less	70 to 80%
Hay	-----	70 to 80%

Recommended Travel Distance to Water ³ (Additional Consideration)		
Lactating Dairy	400-600 feet	Herds water as a group if travel distance is over 800 feet or lead cow travels over hill or leaves shade for water.
Beef Cows, Stockers, Horses, Sheep, or Goats	800 feet 1,000 feet flat land	

Reference: USDA/NRCS eFOTG http://efotg.nrcs.usda.gov/references/public/TN/Cowboy_Math.xls
 Agronomy Technical Note No. 26 <http://www.tn.nrcs.usda.gov/technical/tntechnotes/docs/tn-26.pdf>

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